ARBORICULTURAL REPORT

INSPECTION OF TREES

FREEMASONS ARMS

DOWNSHIRE HILL

HAMPSTEAD HEATH

LONDON. NW3 1NT

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REPORT ON TREES LOCATED TO THE REAR OF THE FREEMASONS ARMS FOR PLANNING PURPOSES

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Supporting Material

Appendix A – TS6558/1.0Plan with tree numbers.

Limitations

1. No soil analysis was performed on site
2. No root, shoot or folia samples were taken for analysis from site
3. Decayed trees were not tested with scientific instruments to determine the extent of decay, nor were they climbed, but inspected from ground level.

Purpose of Report

The purpose of my inspection and this report is to establish the condition of the existing tree stock at the Freemasons Arms

It is to be used by PDP Limited as part of their planning application to Camden Council for carrying out works in the grounds of the Freemasons Arms.

The data presented in Table 1 indicates the measurements taken on site for each individual tree that is located within the rear garden of the Freemasons Arms.

Tree Survey

Table 1: Survey Data

1	2	3	4	5	6	7	8	9	10	11
Nos	**Species**	**Height (M)**	**Dia @1.5M high (cms)**	**Crown Spread**	**Vig**	**5837 Cat.**	**Age**	**RPA Radius (M)**	**Works**	**Comments**
1	Ash	12	30	9	N	A2	EM	3.6	CC. CU to 3M	Located to RHS of entrance gate. Minor damage to adjacent wall.
4	CC. CU to 3M	14	44	9	N	B1	EM	5.28		Bifurcates @ circa 3M then good open form. Minor damage to retaining wall due to physical pressure of root system. Cavity at 2.5M high with some decay evident.
3	Lawson cypress	6	Basal dia 21	3.5	N	B2	EM	2.1	Keep trimmed	Bifurcates @ 30cm high into 2 co-dominant stems. Located in raised bed, regularly pruned
4	Lawson cypress	4	14	3.5	N	B2	EM	1.68	Keep trimmed	Single stem specimen
5	Lawson cypress	4	Basal dia 22	3	N	B2	EM	2.2	Keep trimmed	Bifurcates @ ground level
6	Lawson cypress	7	Basal dia 32	5	N	B2	EM	3.2	Keep trimmed	Multi-stemmed specimen
7	Lawson cypress	7	15	3	N	B2	EM	1.8	Keep trimmed	Recently pruned to give an open habit
8	Lawson cypress	7	16	3	N	B2	EM	1.92	Keep trimmed	Healthy tree
9	Lawson cypress	8	20		N	B2	EM	2.4	Keep trimmed	Healthy tree

Nos	Species	Height (M)	Dia @1.5M high (cms)	Crown Spread	Vig	5837 Cat.	Age	RPA Radius (M)	Works	Comments
10	Lime	22	59	9	N	B1	M	7.08	Pollard to 5M high to reduce height & therefore hazard risk + increases light factor.	Located on western boundary in raised bed. Bifurcates @ 3.5M high into 2 co-dominant stems. Bifurcates again @ 4M higher up. Pruned on neighbours side back to trunk up to 4M high. Branch wound cavities in canopy from previous works. Large lower branch maybe hazardous.
11	Sycamore	18	55	10	P	R	M	NA	Fell for safety reasons	Extensive decay in canopy and on main trunk. High-risk hazard tree.
12	Sycamore	19	66	9	N	B2	M	7.92	Re-pollard to circa 5M	Bifurcates @ 2M high. Pruned away from adjacent building and previously pollarded. Cast a dense shadow in summer months due to size & location.
13	Sumac	6	11	4	N	C3	EM	1.32	None	Well maintained specimen with open branch structure
14	Sycamore	15	54	9	N	B2	M	6.48	CC & prune round street-light	Located on the north boundary Good specimen with open branch structure. Exposed roots run parallel to path. Bifurcates @ 3M high. Located near streetlight.
15	Red Leaf Plum	6	MS	4	N	C2	EM	NA	CC: CU over path. Thin out stems by 20%	Multi-stemmed specimen with vigorous epicormic growth
16	Maple	5	9	4	P	C2	EM	1.08	CC: CU to 3M over path	Poor vigour and form. Retain
17	Ash	18	48	9	P	R	EM	NA	Fell	Bifurcates @ 1.5M.Previous pruning evident. Several decayed branch wounds. Tree appears to be in decline. Bark separation.
18	Ash	18	58	11	N	B2	M	6.96	Strip ivy. CC: CT: 20%CR	Covered in ivy for 70% of the height. Good healthy tree in need of remedial works to promote longevity. Bifurcates @ 2M high. Bat inspection advised in ivy stems. Reduce in height due to location near seating area
19	Ash	19	68	12	N	B2	M	8.16	Strip ivy. CC: CT: 20%CR	Covered in ivy for 70% of the height. Good healthy tree in need of remedial works to promote longevity. Bifurcates @ 2M high. Bat inspection advised in ivy stems. Reduce in height due to location near seating area
20	Maple	6	MS	7	P	R		NA	Fell	Extensive decay in scaffold branches. Poor vigour and form.

Key MS-Multi-stemmed

CC-Crown clean	CU-Crown uplift
CT-Crown thin	EM-Early mature
M-Mature	P-Poor
N-Normal	

Tree Category Key	A	Shown in green and are high quality trees
	B	Shown in blue and are moderate quality trees with a contribution of 20 years minimum.
	C	Shown in grey and are low quality trees with a contribution of 10 years minimum
	R	Shown in red are poor quality trees that should be removed
Sub Category Key	1	Trees of mainly arboricultural value
	2	Trees of mainly landscape value
	3	Mainly cultural or conservation value

Methodology

The trees were plotted by calculating their respective positions in relation to fixed datum points, by using an Impulse Laser 200 rangefinder. This information was then transferred to the scale drawing supplied and the resultant plan can be found in Appendix 1, drawing TS6658/1.0

The diameter of each tree was measured using an industry recognised girthing tape at a height of 1.5M from the ground. This data can be found in column 4 of Table 1 above. Where trees bifurcated below 1.5M high, a diameter reading at just above the basal flare was recorded.

Root Protection Areas

Tree roots can be damaged very easily and once this has occurred then, depending on the age, species and extent of damage the tree may suffer sever die back in the area normally supplied by that root and as a result may die altogether. This is unacceptable and as such trees that are to be retained on construction sites must be protected as afar as reasonably possible from suffering such damage.
The majority of tree roots tree roots will be found within the top 600mm of soil, as this is where the moisture, light, air and heat is concentrated. Any damage to this soil structure may kill the roots. Damage can occur from chemical leakage, soil compaction, soil stripping, and dehydration due to soil level changes.
For these reasons it is essential that the soil around a tree to be retained must be protected. This area is known as the **ROOT PROTECTION AREA** and is calculated from using the table 2 supplied in BS5837: 2005.

The RPA should be an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees and 10 times basal diameter for tres with more than one stem arising below 1.5m above ground level.

$\left(\frac{\text{m}) @ 1.5\text{m} \times 12}{}\right)^2 \times 3.142$
$\left(\frac{\text{immediately above root flare (mm)} \times 10}{1\,000}\right)^2 \times 3.142$
work by Matheny and Clark [10]

hich is equivalent to a circle
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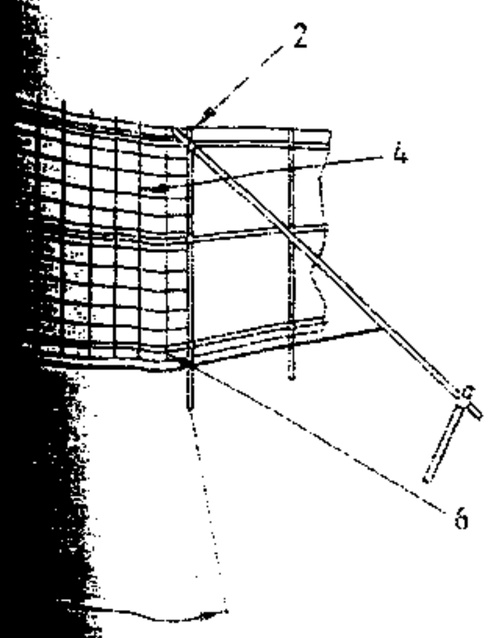

sted and secured
evel

0.6 m driven into the ground

e Fence Design

Where trees are to be protected against lighter traffic then a fence designed as per the diagram below is also acceptable. In my opinion the level of activity in the garden warrants this second type of protective fencing.

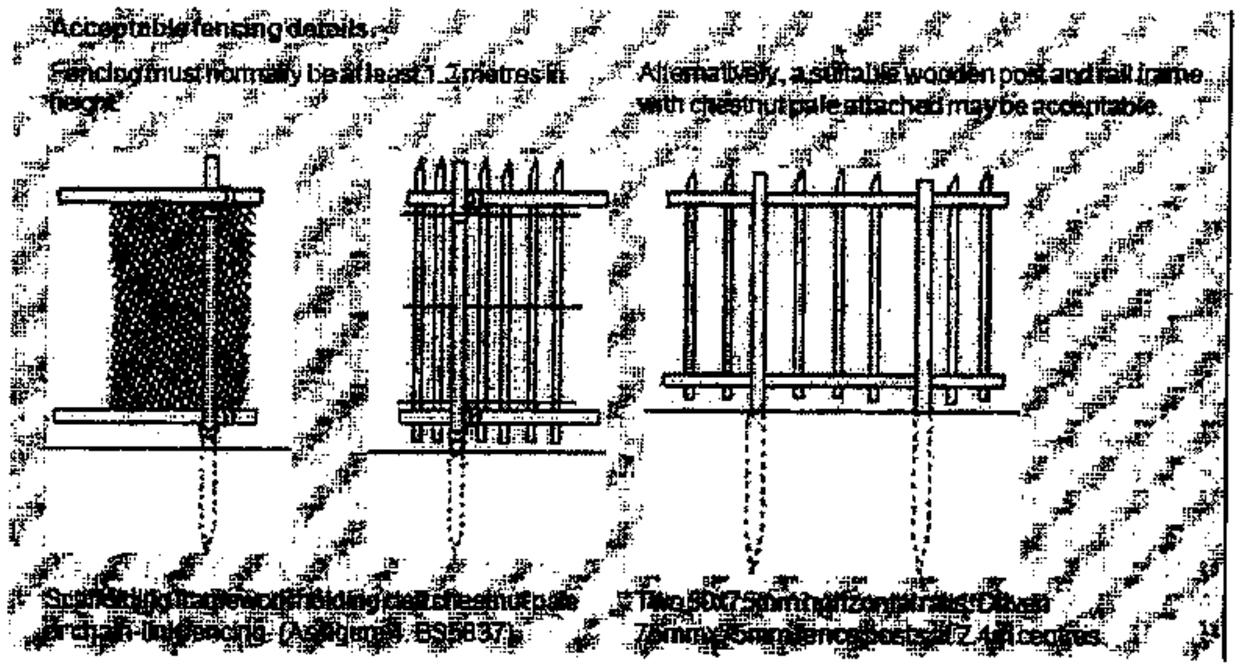

Diagram 2: Light Duty Protective Fence Design

Adjustments to RPA

It should be emphasised that the RPA distances in Table 1 relates to distances from the centre of the tree to the protective fencing. Other considerations, particularly the need to provide adequate space around the tree, including allowances for future growth and working space will usually indicate that the structure should be further away.

With appropriate precautions, temporary site works can occur within the protected area, e.g. for access or scaffolding

If it is deemed acceptable for construction works to occur closer than the minimum distance, the distance can be reduced by 20% on one side only. If distances are reduced in this way, a corresponding increase should be made in the other directions as per Section 5.2.4 (a) of BS5837: 2005.

The initial RPA distance, as shown in table 1 for Tree 10, is shown on the enclosed drawing as RPA 1 in RED at 7.08M from the trees' centre.

The adjusted distance of 5.66M is shown as RPA 2 in BLUE.

At a scale of 1:200 (@A3 size), the proposed new building is located at 5.3M from the centre of tree number 10.

It is my recommendation that a request is made to the LA seeking permission to erect the fence at 4.74M from the tree, (a movement of 30% instead of 20%). This is shown on the enclosed plan in Yellow as RPA3.
The 20% figure for displacement has been recently introduced in to the Arboricultural Industry by way of the new BS5837: 2005 edition; prior to this the industry was using a maximum displacement figure of 33% as stated in the BS5837: 1991 edition, which allowed for greater tolerances to be accommodated.

The overall surface area of the RPA should not be altered to accommodate this request, just merely a slight shift of location away from the proposed building.

Given the existing topography of the area, with the tree being situated within a raised bed, it is highly likely that the root structure on the southern side of the root plate has been checked from growing laterally much further than the existing retaining wall. It is accepted that some of the finer root hairs may have penetrated below the general depth of 600mm and grown under the hard landscaped area to the south of the wall, but these will be few in number and insignificant in the overall scheme of things. With careful selection of foundation design and the use of hand digging methods only it is my opinion that there will be only a miniscule effect on any of the root hairs, which would naturally be repaired in the next growing season.

Foundations

The design of the foundations should take into account soil types, tree positions and load bearing capabilities and follow the guidelines as laid out in the NHBC Chapter 4.2 and Chapter 4.5 documents. If permission is granted for the RPA to be offset by 30% then it should be made a condition of the planning consent that piled foundations should be used on the northern wall (side nearest the tree), so as to reduce any load bearing effects the building would have if it were built on traditional trench style foundations.

Conclusions

- No soil analysis was undertaken
- All other trees that form part of this survey must have an RPA created around their centres and an appropriate fence erected for protection purposes.
- If works are to take place within the RPA then permission must be sort and agreed with the Local Authority (LA).
- The measurements of the RPA can be marginally adjusted by 20% if agreed by the LA in advance of works proceeding. It is recommended that a request for a 30% offset be applied for in this case due to existing topographical features.
- If the trees are covered by Tree Preservation Orders or if the area is designated a Conservation Area then an application MUST be made to the LA

Recommendations

- Fell tree numbers 11, 17 & 20 due to either their condition or location
- Pollard trees 10 &12 to circa 5M high
- Erect the Protective fence at 4.74M from tree 10 on the southeastern side.
- Crown clean most of the other trees and remove ivy where required - prior to removing the ivy a check must be made for nesting birds or roosting bats and if either are found then work must cease in that area. Under the Wildlife and Countryside Act it is illegal to damage either of these creatures and advise must be sort from the LA. Advise on local ecologists can be sourced from the Local Authority.

If we can be of further assistance, or should you require further information, please do not hesitate to contact us.

Yours sincerely

R M Widd

R M Widd. NDF, AA Tech Cert., NEBOSH
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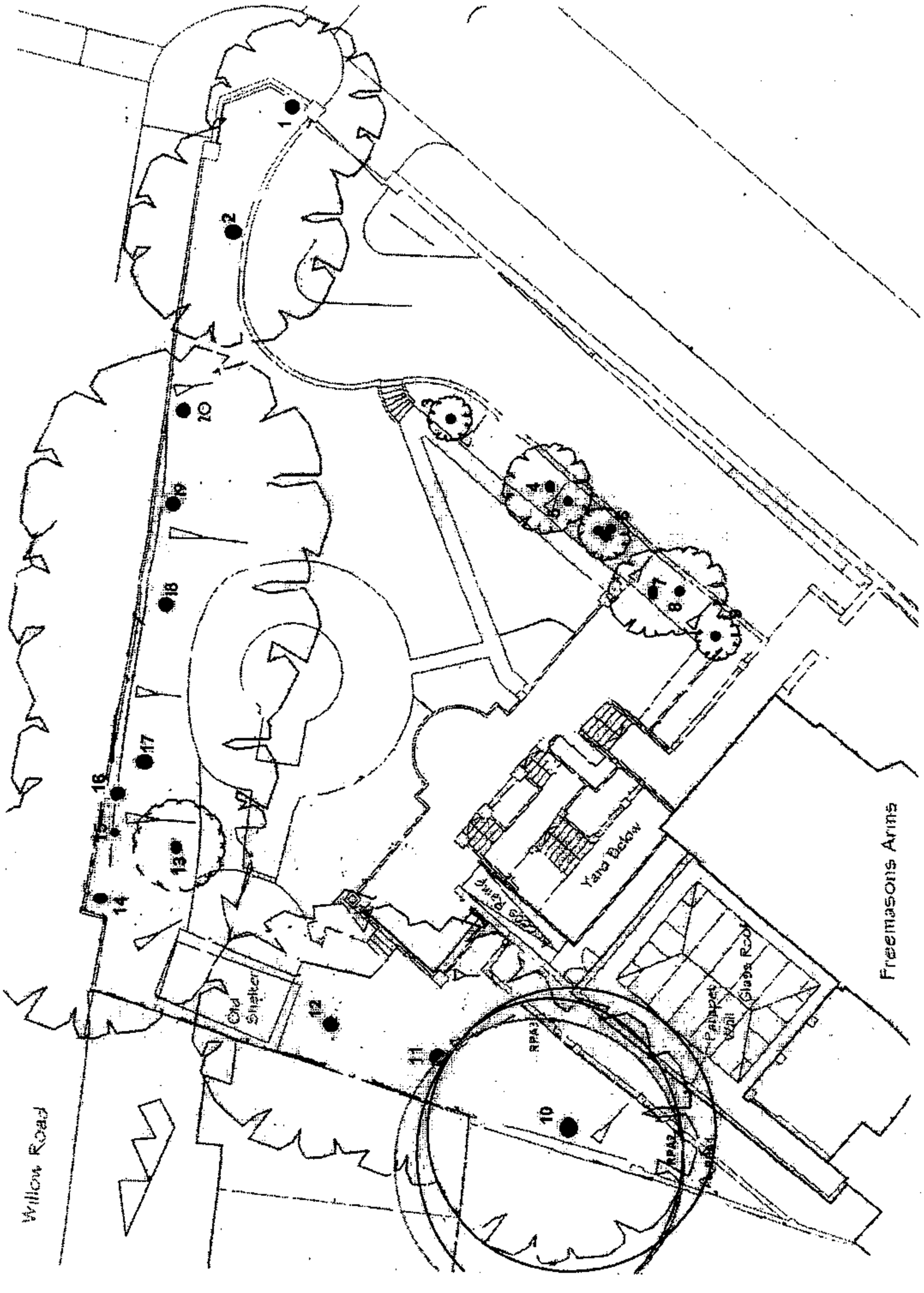
Appendix 1



Drawing TS6658/1.0